Comments on DEQ's draft 2012 Integrated Report and proposed 303(d) list

1. We recognize that streams exhibiting impaired conditions should be investigated in more detail for sources of impairment and the natural range of variability specific to the impaired water body. We support your proposal to list the following two stream segments that intersect with National Forest System (NFS) lands and agree that these listings are necessary to protect and restore the waters of the State and the beneficial uses they support.
    - Record 24894 – Powder River/Mason Reservoir for Mercury
    - Record 25869 – McKenzie River for Lead

2. *Wrong Stream Name* – Record 23601 – North Fork Squaw Creek for Biological Criteria. This stream is improperly named in the proposed listing. The correct name, based on the National Hydrography Dataset (NHD), is North Fork Whychus Creek.

3. We recognize Section 303(d) plays an important role in achieving our water quality goals, yet we believe a few of the proposed modifications or new 303(d) listings are based on insufficient data and problematic assumptions. Questionable listings located on or immediately downstream of NFS lands cause significant concern for the USFS, because they create substantial procedural costs and legal liabilities with potentially little or no demonstrable benefits to water quality on these lands. The following comments summarize our concerns regarding specific proposed listings that we would like to discuss with you in more detail.

    3.1 *Extrapolation of unrepresentative data* – The approach of listing all waters upstream from a monitoring location where water quality impairments exist, i.e. from mouth to headwaters, often assumes that impaired water quality conditions exist far distances from sampling sites. In some cases, these segments extend over 100 miles upstream into vastly different terrain and land management. We believe that Category 5 listings (waters are impaired and a Total Maximum Daily Load is needed) above these downstream sites should be based either on synoptic sampling or a standard approach that is not overly-assumptive. Although we understand and accept that listing decisions will always be uncertain due to limitations in available monitoring data, we believe that other considerations, e.g., presence or absence of likely sources of pollutants, should be used to make more judicious decisions. Comments 3.1.1 through 3.1.3 specify our concerns in greater detail.

        3.1.1 We believe that listings based on samples near a river mouth should not extend into distant headwater areas that have not been substantially altered by man, such as Wilderness areas on NFS lands.

            3.1.1.1 Example Record: 24936 – Minam River for Copper.
            This stream is proposed for Category 5 from River Mile 0 to 49.4 because 2 of 6 samples obtained at River Mile 0.5 exceeded the hardness dependent criteria.

The potential for the Minam River watershed to produce measurable amounts of soluble copper is extremely low. The Minam River watershed lacks the geologic setting associated with the existence of significant amounts of copper (The *Appraisal of Findings*, Geological Survey Bulletin 1385-E, page E-83). Furthermore, while mining activities are a common anthropogenic source of copper, no such activities have occurred on NFS lands in the Minam River watershed. As such, there is no valid reason to extend this listing onto NFS lands and into the Eagle Cap Wilderness area. Furthermore, another potential source of copper may be located in Squaw Creek, thus there is some potential that copper may not exist in the Minam River upstream of the Squaw Creek confluence.

We believe this segment should be revised to reflect the available information from lowest reach of Minam River. We suggest that the Category 5 listing be revised to end at River Mile 2.56 where the Minam River meets Squaw Creek, since there are no monitoring data or other evidence available to suggest the exceedence of copper water quality standards above this confluence in either stream.

3.1.1.2 Other proposed listings are similar to the example presented above. We suggest that these segments be truncated to reflect known water quality impairments. Specifically, for records listed below, we propose to eliminate those portions within Wilderness areas of NFS lands, as no information is available to suggest these stream segments are water quality limited:

- Record 23601 – North Fork Squaw Creek for Biological Criteria. This proposed listing extends 5 miles into the Three Sisters Wilderness of the Deschutes National Forest.
- Record 23598 – Coe Branch for Biological Criteria. This proposed listing extends 2.9 miles into the Mt. Hood Wilderness of the Mt. Hood National Forest.
- Record 23696 – Fitt Creek for Biological Criteria. This entire proposed listing of 2.2 miles is located within the Middle Santiam Wilderness of the Willamette National Forest.
- Record 23813 – Sucker Creek for Biological Criteria. This proposed listing extends 3.2 miles into the Red Butte Wilderness of the Rogue River-Siskiyou National Forest.
- Record 23987 – Little Zigzag Canyon for Biological Criteria. This proposed listing extends 3.0 miles into the Mt. Hood Wilderness of the Mt. Hood National Forest.
- Record 24176 – Bolivar Creek for Biological Criteria. This proposed listing extends 1.1 miles into the Wild Rogue Wilderness of the Rogue River-Siskiyou National Forest.
- Record 24218 – Flora Dell Creek for Biological Criteria. This entire proposed listing of 1.6 miles is located within the Wild Rogue Wilderness of the Rogue River-Siskiyou National Forest.

3.1.2 The method used by DEQ extrapolates monitoring data to water bodies far beyond reasonable and acceptable methods employed in adjacent states, such as the NHD reach confluence to confluence methodology used by the Washington Department of Ecology.

3.1.2.1 Example Record: 15412 – West Fork Hood River for Silver.
This stream has been proposed for Category 5 from River Mile 0 to 14.4 because 3 of 3 valid samples obtained at River Mile 4.6 exceeded the 0.12 µg/L criteria.

The lower two-thirds of this stream flows through private lands, and the river extends onto NFS lands beginning at River Mile 9.26. Sampling has not been conducted in way that confirms that the pollutant exists on NFS lands.

We propose ending this Category 5 listing at River Mile 5.6, at the confluence of West Fork Hood River, Lake Branch and Camp Creek, as there are no monitoring data available that suggests impairment for silver above this major confluence.

3.1.2.2 Other proposed listings are similar to the example presented above and should be truncated to reflect known water quality impairments. We recommend not extending these listings on NFS lands, as no information is available to suggest the stream segments within these areas are water quality limited:

- Record 15130 – Neal Creek for Silver
- Record 25750 – Clackamas River for Lead
- Record 25137 – Clackamas River for Mercury

3.1.3 The method used to define impaired stream segments needing a TMDL (Category 5) erroneously attributes fish tissue samples to the water in which the fish were caught, without regard to their close proximity to known impaired waters.

3.1.3.1 Example Record: 25408 – McKenzie River for Mercury.
This stream has been proposed for Category 5 from River Mile 0 to 84.8 because 15 valid fish tissue samples obtained at River Mile 3.1 exceed the 0.040 mg/kg criteria.

The mercury levels are accepted and known to be higher in the Willamette River, located 3.1 miles downstream of the sampling location. A TMDL for Mercury has already been approved for the Willamette River in the stream reach immediately downstream of the confluence with the McKenzie River (Willamette River Miles 148.8 to 174.5). Furthermore, these fish tissue samples were from northern pikeminnow and large-scale sucker, which are known to migrate up to the McKenzie River through the Willamette River. In addition, the Eugene Water & Electric Board obtains

drinking water from the McKenzie River and has not found mercury in any of their samples. As such, it seems more likely that the mercury found in the tissue samples came from other waters. Given these facts, we believe a Category 5 listing for mercury is unwarranted in the McKenzie River at this time.

3.1.3.2 Similar to the previous example, we propose that the following listing be revised to reflect known water quality impairments. Specifically, we suggest that the following segment be changed to exclude waters on NFS lands, as no information is available to suggest that it is water quality limited within NFS lands:

- Record 25569 – Rogue River for Mercury

3.2 *Conflicting Data* – The USFS collects monitoring data that were not used in this assessment process, and in some cases, these data contradict the listings proposed.

3.2.1 *Dissolved Oxygen* – Record 25045 – Lookout Creek. This listing is proposed due to the spawning criteria for January 1 to June 15 of dissolved oxygen no less than 11.0 mg/L or 95% of saturation. The proposed listing is stated due to samples collected at USGS Station 14161500 at River Mile 0.3 from 01/09/2003 to 06/13/2011, where 5 of 35 samples were < 11.0 mg/l and < 95% saturation.

The USFS has collected dissolved oxygen readings in Lookout Creek as part of the monitoring at HJ Andrews Experimental Forest. Much of their monitoring data is obtained in the summer months, so they specifically collected winter samples to verify the winter water quality conditions at two locations in Lookout Creek:

- USGS Station 14161500 – River Mile 0.3
- Forest Road 1506 crossing of Lookout Creek – River Mile 3.2

The data, which were adjusted for barometric pressure, are as follows:

Location on Lookout Creek	Date	Time	Dissolved Oxygen (mg/l)	Water Temperature (C)	% Saturation	mmHg
USGS Gage 14161500	2/4/2014	1328	12.71	4.4	101.9	731
	2/4/2014	1711	12.68	4.3	101.4	731
	2/5/2014	856	13.32	2.6	101.1	736
	2/5/2014	1806	13.3	2.5	101.2	732
Forest Road 1506 Concrete Bridge	2/4/2014	1352	13.03	4.0	104.9	721
	2/4/2014	1734	12.64	3.8	101.3	721
	2/5/2014	927	13.33	2.3	101.8	725
	2/5/2014	1745	13.21	2.2	101.1	722

Since these readings are all above the winter spawning criteria, we believe the proposed Category 5 listing of Lookout Creek for winter dissolved oxygen values is unnecessary and should not be included in the 303(d) list.

3.3 *Insufficient Data* – DEQ has proposed to move 26 water bodies from Category 3 (insufficient data to determine whether any designated uses are met) to Category 5 for Biological Criteria. The following 14 proposed segments are on NFS lands.

- Record 23565 – Panther Creek
- Record 23593 – Fairview Creek
- Record 23702 – Elk Creek
- Record 23854 – Hall Creek
- Record 23858 – Pyburn Creek
- Record 24153 – Rock Creek
- Record 24223 – Horse Sign Creek
- Record 23601 – North Fork Squaw Creek
- Record 23598 – Coe Branch
- Record 23696 – Fitt Creek
- Record 23813 – Sucker Creek
- Record 23987 – Little Zigzag Canyon
- Record 24176 – Bolivar Creek
- Record 24218 – Flora Dell Creek

We do not believe this action is warranted or supportable at this time, as all but one of these sites have only one macroinvertebrate sample. Without other supportive data or evidence, the available data do not provide a sound scientific basis for listing waters as impaired. Several interagency efforts are underway that can provide additional monitoring data. We recommend that the proposed listings remain in Category 3 until the substantial additional data that is available is evaluated. These efforts are described below.

- Western Oregon. The USFS/BLM/NPS, Northwest Forest Plan-Aquatic and Riparian Effectiveness Monitoring Program (AREMP) is collaborating with DEQ, ODFW, WDE, CAFW and Utah State University to develop a comprehensive and consistent network of regional reference sites. Reference sites from this collaboration will be used to develop macroinvertebrate bioassessment models (index of biological integrity and observed/expected) that can be applied at both regional and reach scales to make status determinations on federal lands.

  We believe this work, together with the development of updated watershed condition models (reflecting both watershed and in-stream data) will provide a much more robust basis for making listing decisions because they will: 1) result in a substantially larger interagency macroinvertebrate dataset. AREMP alone has collected macroinvertebrate samples and physical habitat data at 815

locations (130 watersheds) within western Oregon, of which 595 have been resampled during at least two time periods. Resampled locations may have as many as five revisits within nine years. Inclusion of macroinvertebrate data from DEQ and ODFW will increase the dataset by adding as many as 5000 additional sites; 2) produce bioassessment models from a standard set of reference sites; 3) quantify the accuracy and precision of the models and the magnitude and source of spatial and temporal variability; 4) determine minimum detectable differences between test and reference sites; and 5) include characterizations of watershed conditions, which is critical to interpreting the outputs of bioassessment models.

- Eastern Oregon. The USFS/BLM/NPS Pacfish/Infish Biological Opinion Effectiveness Monitoring Program (PIBO) in eastern Oregon also has substantial data and information available to inform listing decisions for biocriteria. The PIBO program has a network of over 200 Reference sites that were used to develop a macroinvertebrate bioassessment models (index of biological integrity and observed/expected) that can be applied at both regional and reach scales to make status determinations on federal lands. Specifically, this program has 319 locations with macroinvertebrate data and model scores. The majority of these sites have been visited three times following the programs 5 year rotating panel which began in 2001. In addition, the PIBO program has data on stream habitat conditions, stream temperature and riparian vegetation at these sites, which facilitates interpretation of the macroinvertebrate data.

4. We would like to provide comment on some segments added to the 2010 303(d) list by EPA in December 2012, because these comments are similar to those listed in Comment 3. Similar to our comments provided above, we have some concerns regarding the data and approaches used to list stream segments. We would like to discuss our comments with you at your earliest convenience.

   4.1 *Extrapolation of unrepresentative data* – The approach of listing all waters upstream from a monitoring location where water quality impairments exist, i.e. from mouth to headwaters, often assumes that impaired water quality conditions exist far distances from sampling sites.

   In the 2010 303(d) list approved by EPA, 125 miles of streams within Wilderness areas of NFS lands were listed as Category 5 for biological criteria, and an additional 7.9 miles within Wilderness areas were listed as Category 5 for sedimentation. The Wilderness areas of NFS lands are typically the most pristine areas in the State of Oregon. The large extent of Wilderness streams that were listed as water quality limited by EPA highlight potential flaws with the models or reference sites employed to create these listings. The segments listed that are located within NFS Wilderness areas are:

Record ID	Stream Name	Pollutant	Length of listed stream within wilderness (miles)
24382	Onion Creek	Sedimentation	0.04
24392	Trib to Strawberry Creek	Sedimentation	0.2
24445	Bridge Creek	Sedimentation	3.9
24484	South Fork Breitenbush	Sedimentation	3.8
23258	Onion Creek	Biological Criteria	0.04
23307	South Fork John Day River	Biological Criteria	0.6
23333	Bridge Creek	Biological Criteria	3.9
23360	South Fork Salmon River	Biological Criteria	4.6
23365	Salmon River	Biological Criteria	0.9
23365	Salmon River	Biological Criteria	13.6
23368	Hot Springs Fk Collawash	Biological Criteria	7.7
23396	Falcon Creek	Biological Criteria	1.8
23611	Crane Creek	Biological Criteria	3.8
23619	Imnaha River	Biological Criteria	5.6
23633	Granite Creek	Biological Criteria	2.0
23669	Polallie Cr Trib	Biological Criteria	2.7
23690	Swamp Creek	Biological Criteria	1.1
23712	Eagle Creek	Biological Criteria	8.2
23726	Clackamas River	Biological Criteria	5.1
23866	Chetco River	Biological Criteria	26.2
23897	East Lostine River	Biological Criteria	5.9
23904	Beaver Creek	Biological Criteria	3.9
23914	Little Malheur River	Biological Criteria	1.6
23984	Harphan Creek	Biological Criteria	1.6
23992	Tipsoo Creek	Biological Criteria	2.2
23995	Dickey Creek	Biological Criteria	3.7
23998	Unnamed Stream	Biological Criteria	1.9
24009	Egg Creek	Biological Criteria	1.7
24010	Tipsoo Creek	Biological Criteria	1.3
24033	Fish Lake Creek	Biological Criteria	2.6
24247	Sunshine Creek	Biological Criteria	1.2
24276	Cold Spring Creek	Biological Criteria	3.3
24283	Middle Santiam River	Biological Criteria	5.6
24320	Cummins Creek	Biological Criteria	0.7

4.2 *Conflicting Data* – The protocol for listing stream segments did not take into account the existing monitoring data that demonstrate water quality standards are being met in 9 stream segments that extend through NFS lands. The segments added by EPA for Biological Criteria that have data that meets water quality criteria are:

- Record 23292 – Camas Creek
- Record 23320 – Roba Creek
- Record 23368 – Hot Springs Fk Collawash River
- Record 23473 – Althouse Creek
- Record 23712 – Eagle Creek
- Record 23763 – East Fork Evans Creek
- Record 23943 – Camp Creek
- Record 24240 – East Fork Winchuck River
- Record 24264 – Deep Creek

4.3 *Insufficient Data.* EPA moved 143 water bodies on NFS lands from Category 3 to Category 5 for Biological Criteria, as well as 17 records for sedimentation. These Category 5 listings now require the development of TMDLs for an additional 1,229 miles of stream within the NFS administrative boundary, including over 130 miles of stream within pristine Wilderness areas. Most of these sites were listed based on only one valid sample and a substantial amount of monitoring data is available that could help bolster or revise these listings. Without additional supportive data or evidence, we do not believe there is sound, scientific basis for listing all of these waters as impaired at this time. We recommend that these segments should be changed to Category 3 until available data can be incorporated and reviewed.

Miles of Stream that EPA added to Oregon's 2010 303(d) list	Biological Criteria	Sedimentation
Within NFS wilderness areas	125	7.9
Within NFS lands, but outside wilderness areas	1,006	90
Total stream miles within NFS lands	1,131	98